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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/771,631	01/30/2001	Mehdi Hamadou	Q62250	1269

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EXAMINER	
HOLMES, MICHAEL B	
ART UNIT	**PAPER NUMBER**
2121	

DATE MAILED: 09/13/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/771,631	HAMADOU ET AL.	
	Examiner	Art Unit	
	Michael B. Holmes	2121	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *(3)* MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 July 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-16* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-16* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

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Examiner's Detailed Office Action

Response to Amendment

1. This Office Action is responsive to communication received on **July 21, 2004.** Amendment under 37 CFR § 1.111. Reconsideration and allowance of the present application 09/771,631, filed January 30, 2001, is respectfully requested by applicant. All such supporting documentation has been placed in applicant's file.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-16 are rejected under 35 U.S.C. 102(b) as being anticipated by *Saucedo et al.* (USPN 5,754,738).

Regarding claim 1: *Saucedo* teaches an information operating (*Examiner interprets* FIG. 35; C 3, L 50-61, *as a information operating system*) or monitoring system for a real device having real subcomponents, the system comprising: a data processing device, comprising a software model including virtual components, wherein the software model represents the real device, and wherein the virtual components are linked to each other in correspondence to relationships of or within the real device [(col. 1, line 8-14); col. 1, line 37 to col. 2, line 23 "*The present invention is directed to a computerized prototyping system containing a virtual system design environment ... and to automatically optimize the model with the help of a knowledge based expert system.*")]; and a display for displaying views associated with the virtual components [(col. 1, line 8-14); col. 1, line 37 to col. 2, line 23 "*The present invention is directed to a computerized prototyping system containing a virtual system design environment ... and to automatically optimize the model with the help of a knowledge based expert system.*")]; wherein at least one of the virtual components and the views include access data for accessing at least one of local information data and global information data, which are associated with the virtual components. [(col. 1, line 8-14); col. 1, line 37 to col. 2, line 23 "*The present invention is directed to a computerized prototyping system containing a virtual system design environment ... and to automatically optimize the model with the help of a knowledge based expert system.*")]

Regarding claim 2: *Saucedo* teaches the real device comprises an automation system. [(Abstract of the Invention "*and to automatically optimize the model with the help of a knowledge based expert system.*")]

Regarding claim 3: *Saucedo* teaches links between the virtual components form a data structure of the software model that is stored in the data processing device. [(col. 1, line 8-14); col. 1, line 37 to col. 2, line 23 "*The present invention is directed to a computerized prototyping system containing a virtual system design environment ... and to automatically optimize the model with the help of a knowledge based expert system.*")]

Regarding claim 4: *Saucedo* teaches the virtual components comprise a virtual device and virtual subcomponents, which represent the real device and the real subcomponents, respectively, wherein the virtual device and the virtual subcomponents are designed as at least one of data and data processing programs, and wherein the virtual device and the virtual subcomponents are linked to each other in correspondence to at least one of operational relationships, physical relationships, and technical relationships of or within the real device. [(col. 1, line 8-14); col. 1, line 37 to col. 2, line 23 "*The present invention is directed to a computerized prototyping system containing a virtual system design environment ... and to automatically optimize the model with the help of a knowledge based expert system.*")]

Regarding claim 5: *Saucedo* teaches the data processing programs are embedded in a software frame via cross-references, and wherein at least one of the software frame and the cross-reference is structured to permit, for navigation purposes, access by a user to at least one of the virtual device and the virtual subcomponents. [(col. 3, line 50-61 "*Initially, attention is directed to* FIG. 35 *which shows a schematic representation of the general interrelationships between the human user and the computerized prototyping system of the invention, including the various*

components and associated interfaces. Stored in a computer RAM of the prototyping system are graphic software code, design browsers code, constraint solver program code, printer and plotter drivers, optimization algorithm code and knowledge base system code. Further, a computer hard drive contains the requisite database. Input devices include a keyboard and mouse, and a printer and plotter may be plotter may be provided in addition to the user interface screen.")]

Regarding claim 6: *Saucedo* teaches further comprising: a connection between the data processing device and the real device, wherein, via the connection, control data and process data are transmitted in at least one of a unidirectional manner and a bi-directional manner; and a component arranged in the data processing device, wherein the component is structured for at least one of transmitting and receiving data. [(col. 3, line 50-61 "*Initially, attention is directed to* FIG. 35 *which shows a schematic representation of the general interrelationships between the human user and the computerized prototyping system of the invention, including the various components and associated interfaces. Stored in a computer RAM of the prototyping system are graphic software code, design browsers code, constraint solver program code, printer and plotter drivers, optimization algorithm code and knowledge base system code. Further, a computer hard drive contains the requisite database. Input devices include a keyboard and mouse, and a printer and plotter may be plotter may be provided in addition to the user interface screen.*")]

Regarding claim 7: *Saucedo* teaches technologically different ones of the virtual subcomponents are assigned to the virtual device, wherein technologically structured subordinate components are assigned to each of the virtual subcomponents, and wherein the access data are structured for navigating a user through the virtual device, through the technologically different virtual subcomponents, and through the subordinate components. [(col. 3, line 50-61 "*Initially, attention is directed to* FIG. 35 *which shows a schematic representation of the general interrelationships between the human user and the computerized prototyping system of the invention, including the various components and associated interfaces. Stored in a computer RAM of the prototyping system are graphic software code, design browsers code, constraint solver program code, printer and plotter drivers, optimization algorithm code and knowledge base system code. Further, a computer hard drive contains the requisite database. Input devices include a keyboard and mouse, and a printer and plotter may be plotter may be provided in addition to the user interface screen.* ")]

Regarding claim 8: *Saucedo* teaches a method for operating and monitoring a real device having real subcomponents, comprising: navigating in a model stored in a data processing device, wherein the model comprises virtual components and views, wherein the virtual components represent the real device, and wherein the views are assigned to the virtual components [(col. 3, line 50 to col. 4, line 13 " *As shown in* FIG. 1, *the virtual system design environment* ... ODSS *allows the downselection of alternate designs and their high level design optimization.*")]; assigning a model structure to the model, wherein the model structure is stored in the data processing device, and wherein the model structure comprises a linkage of the virtual

components in correspondence to relationships of or within the real device [(col. 4, line 51-63 " *Each stage will be associated with a set of specification ... The components of the overall system is shown in* FIG. 4. *The flow-chart representation of the evaluation methodology is shown in* FIG. 5.")]; and accessing at least one of local information data and global information data via access data that are included in at least one of the virtual components and the views, wherein the local information data and the global information data are associated with the virtual components. [(col. 4, line 51-63 " *Each stage will be associated with a set of specification ... The components of the overall system is shown in* FIG. 4. *The flow-chart representation of the evaluation methodology is shown in* FIG. 5.")]

Regarding claim 9: *Saucedo* teaches further comprising displaying the local information data and the global information data to a user via the views. [(col. 5, line 4-10 "*The designer either builds a KBS using the ODSS or loads a previously designed KBS into the ODSS. During the KBS building, variables at each level and their interconnection strengths are provided through a text edit window. The designer views the decision tree structure through the graphical user interface and makes any necessary changes to the model, at any time during the design process.*")]

Regarding claim 10: *Saucedo* teaches further comprising assigning a menu bar to a specific one of the views, wherein the menu bar identifies access capabilities to other available ones of the views, which are different from the specific one of the views. [FIG. 11, FIG. 12 & FIG. 13 (col. 7, line 4-26 "*The Graphical User Interface is an important component of ODSS and VSDE. In using the VSDE, many of the flexibility comes from user-friendly GUIS. Mainly there are three*

types of interfaces in ODSS. ... In this case ODSS evaluated six different design alternatives against a set of designer specified criteria and ranked them in numerical order.")]

Regarding claim 11: *Saucedo* teaches further comprising transmitting data via a connection between the data processing device and the real device. [(col. 3, line 50-61 "*Initially, attention is directed to* FIG. 35 *which shows a schematic representation of the general interrelationships between the human user and the computerized prototyping system of the invention, including the various components and associated interfaces. Stored in a computer RAM of the prototyping system are graphic software code, design browsers code, constraint solver program code, printer and plotter drivers, optimization algorithm code and knowledge base system code. Further, a computer hard drive contains the requisite database. Input devices include a keyboard and mouse, and a printer and plotter may be plotter may be provided in addition to the user interface screen.*")]

Regarding claim 12: *Saucedo* teaches the data comprise at least one of operation data and control data. [FIG. 11, FIG. 12 & FIG. 13 (col. 7, line 4-26 "*The Graphical User Interface is an important component of ODSS and VSDE. In using the VSDE, many of the flexibility comes from user-friendly GUIS. Mainly there are three types of interfaces in ODSS. ... In this case ODSS evaluated six different design alternatives against a set of designer specified criteria and ranked them in numerical order.*")]

Regarding claim 13: *Saucedo* teaches further comprising activating a virtual subcomponent as one of the views by selecting a section of an image of the real device, wherein the section represents the virtual subcomponent. [FIG. 11, FIG. 12 & FIG. 13 (col. 7, line 4-26 "*The Graphical User Interface is an important component of ODSS and VSDE. In using the VSDE, many of the flexibility comes from user-friendly GUIS. Mainly there are three types of interfaces in ODSS. ... In this case ODSS evaluated six different design alternatives against a set of designer specified criteria and ranked them in numerical order.*")]

Regarding claim 14: *Saucedo* teaches a user interface for operating and monitoring a device comprising subcomponents interrelated through technical relationships, wherein the user interface comprises a plurality of screen windows on a screen of a display [FIG. 11, FIG. 12 & FIG. 13 (col. 7, line 4-26 "*The Graphical User Interface is an important component of ODSS and VSDE. In using the VSDE, many of the flexibility comes from user-friendly GUIS. Mainly there are three types of interfaces in ODSS. ... In this case ODSS evaluated six different design alternatives against a set of designer specified criteria and ranked them in numerical order.*")]; wherein each screen window comprises an information set regarding one of the subcomponents of the device[FIG. 11, FIG. 12 & FIG. 13 (col. 7, line 4-26 "*The Graphical User Interface is an important component of ODSS and VSDE. In using the VSDE, many of the flexibility comes from user-friendly GUIS. Mainly there are three types of interfaces in ODSS. ... In this case ODSS evaluated six different design alternatives against a set of designer specified criteria and ranked them in numerical order.*")]; wherein each screen window comprises at least one cross-reference via which a user selects a specific screen window within the plurality of screen windows; and

wherein the respective information sets on each screen window are linked to each other by the at least one cross-reference in correspondence to the technical relationships between the subcomponents of the device. [FIG. 11, FIG. 12 & FIG. 13 (col. 7, line 4-26 "*The Graphical User Interface is an important component of ODSS and VSDE. In using the VSDE, many of the flexibility comes from user-friendly GUIS. Mainly there are three types of interfaces in ODSS. ... In this case ODSS evaluated six different design alternatives against a set of designer specified criteria and ranked them in numerical order.*")]

Regarding claim 15: *Saucedo* teaches an information, operation or monitoring system (*Examiner interprets* FIG. 35; C 3, L 50-61, *as a information operating system*)for a real device having a plurality of subcomponents and a data processing device, (FIG. 35, *is capable of performing this function*) comprising: a model having virtual components representing the real device and views associated with the virtual components for presenting information data of the virtual components stored locally on at least one of the data processing device and a computer linked to the data processing device; (C 1, L 37-48, *is capable of performing this function*) wherein the model has a model structure stored in the data processing device; (C 1, L 52-60, *is capable of performing this function*) wherein the model structure is formed from a linkage of the virtual components analogously to the relationships of the real device; (C 1, L 8-14, *is capable of performing this function*) wherein at least one of the virtual components and the views have access data for accessing the information data; (C 1, L 8-14, *is capable of performing this function*) wherein a connection is provided between the data processing device and the real device; (C 2, L 18-23, *is capable of performing this function*) wherein the data processing device has at least one of a

transmission and receiving component for at least one of transmitting and receiving data; (FIG. 35, *is capable of performing this function*) and wherein the real device is provided for at least one of unidirectional and bidirectional transmission of control and process data. (FIG. 35, *is capable of performing this function*)

Regarding claim 16: *Saucedo* teaches a method for information, operation or monitoring a real device, which includes a plurality of subcomponents, wherein a model having virtual components is provided as a representation of the real device and in which views are respectively assigned to the virtual components, via which information data of the virtual components that are stored locally on at least one of a data processing device and a computer linked to the data processing device is displayed to a user; (FIG. 30 & FIG. 35, *is capable of performing this function*) wherein the user accesses the information data via at least one of the virtual components and access data assigned to the views; (C 1, L 8-14, *is capable of performing this function*) wherein a connection is provided between the data processing device and the real device; (FIG. 35, *is capable of performing this function*) wherein the data processing device has at least one of a transmission and receiving component for at least one of transmitting and receiving data; (FIG. 35, *is capable of performing this function*) and wherein the connection between the data processsing device and the real device is provided for at least one of unidirectional and bidirectional transmission of control and process data. (FIG. 35, *is capable of performing this function*)

Response to Arguments

4. In the remarks applicant argues that the cited reference fails to disclose:

I) "... a software model of a real device, wherein the software model includes virtual components that are linked to each other in correspondence to relationships of or within the real device, ... "

I) Examiner contends, "... a software model of a real device, wherein the software model includes virtual components that are linked to each other in correspondence to relationships of or within the real device, ... " is taught by *Saucedo et al.* (USPN 5,754,738), **[(col. 3, line 50 to** col. 4, line 23**"***Initially, attention is directed to* ***FIG. 35 which shows a schematic representation of the general interrelationships between the human user and the computerized prototyping system of the invention, including the various components and associated interfaces****. Stored in a computer RAM of the prototyping system are graphic software code, design browsers code, constraint solver program code, printer and plotter drivers, optimization algorithm code and knowledge base system code. Further, a computer hard drive contains the requisite database. Input devices include a keyboard and mouse, and a printer and plotter may be plotter may be provided in addition to the user interface screen. As shown in FIG. 1,* ***the virtual system design environment of the present computerized prototyping system includes four major stages of operations: (a) Downselection of candidate designs; (b) Conceptual level design optimization; (c) Virtual design and prototyping; and (d) Virtual analysis of the designed systems (FIG. 1).*** *The candidate design downselection and higher level design optimization stages are a part of the conceptual design process, while the virtual prototyping and virtual analysis stages correspond to the detailed design stages. In the conceptual design stages, exact mathematical representation*

of the model to be optimized need not be known. The user can build a model using the decision tree principles, with the interrelationships between the variables defined as fuzzy variables, such as mediums, high, very high etc. The conceptual design stage of VSDE is handled by a module called Optimization and Decision Support System (ODSS). ODSS allows the downselection of alternate designs and their high level design optimization. The detailed design for the subsystems is done in the virtual prototyping stage, where solutions are estimated for a set of equations describing the subsystems. ***As shown in FIG. 2, in VSDE, these operations are a part of the Design Environment (DE) module. The designs always need not be performed inside the VSDE, the can be designed outside and ported into from commercial CAD systems. In the case of functional design tasks, the subsystem functionalities can be incorporated into VSDE either through mathematical representations or through models.***")]

Examiners Summary

5. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

6. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Correspondence Information

7. Any inquiries concerning this communication or earlier communications from the examiner should be directed to **Michael B. Holmes** who may be reached via telephone at **(703) 308-6280**. The examiner can normally be reached Monday through Friday between 8:00 a.m. and 5:00 p.m. eastern standard time.

If you need to send the Examiner, a facsimile transmission regarding After Final issues, please send it to **(703) 746-7238**. If you need to send an Official facsimile transmission, please send it to **(703) 746-7239**. If you would like to send a Non-Official (draft) facsimile transmission the fax is **(703) 746-7240**. If attempts to reach the examiner by telephone are unsuccessful, the **Examiner's Supervisor, Anthony Knight**, may be reached at **(703) 308-3179**.

Any response to this office action should be mailed too:

Director of Patents and Trademarks Washington, D.C. 20231. Hand-delivered responses should be delivered to the Receptionist, located on the fourth floor of **Crystal Park II, 2121 Crystal Drive Arlington, Virginia.**

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